

Biological Objectives Policy Issues

Science Advisory Committee

18 April 2012

Policy Proposal

State Water Board staff propose to develop for the Board's review and approval a Policy for Water Quality Control that establishes a statewide narrative water quality objective for protecting biological communities and a plan of implementation that describes how compliance with the objective will be measured using biological assessment tools and numeric thresholds.

Policy Issues

Establishing Biological Expectations

Potential reference sites are selected based on minimal human disturbance using readily available GIS data layers. Selected reference sites are then assessed to ensure that, in fact, they are minimally disturbed and to evaluate the biological community present. Confirmed reference sites are then pooled together to establish reference condition against which "test" sites can be compared. Test sites are compared to pools of reference sites that are similar to the test sites in characteristics such as geology, precipitation, slope, etc. to account for natural variation. SWAMP has established a pool of 615 reference sites statewide. This pool of sites provides representative condition for nearly all regions of the state with the exception of the Central Valley floor and the low gradient areas of the Southern California Coast.

Options

1. Establish reference condition as the biological expectation for all streams where reference can be established (based on minimal disturbance thresholds).
2. Recognize that reference condition is an unreasonable expectation for some settings (e.g., highly urbanized areas or highly modified streams).
 - 2.1. Don't apply biological expectations where reference condition cannot be established.
 - 2.2. Establish "best attainable" expectations for streams where reference is not a reasonable expectation.

Issues

- For option 2, criteria for determining which expectations apply to what streams would need to be developed.

Protecting High Quality Streams

Historically, the Water Boards have focused monitoring resources on areas where water quality problems would be expected. As a result, streams that are in relatively undisturbed watersheds were not assessed. Recently, the SWAMP Perennial

Streams Assessment (PSA) has monitored randomly selected streams statewide to objectively evaluate condition of streams. While the results of the PSA show about 50% of stream miles is impaired biologically, they also show that about 50% of stream miles are in good condition (e.g., similar to reference condition). SWAMP's Reference Condition Management Program (RCMP) also monitors undisturbed areas. One primary goal of the biological objectives policy is to include in the plan of implementation guidance for implementing the anti-degradation policy to ensure that healthy streams are protected from degradation.

Options

1. Establish criteria for identifying high quality streams and include in the plan of implementation guidance for implementing the anti-degradation policy to protect them from future degradation.
2. Use biological assessment to identify healthy streams but do not include guidance for applying the anti-degradation policy to protect them from degradation.

Issues

- How would or should this guidance be used in regulatory programs such as 401 water quality certifications, water rights applications, and stormwater discharge permits?
- Should the policy establish a process for identifying high quality waters using remotely sensed/GIS information (i.e., identify/designate high quality waters even if they have not been directly assessed)?

Identifying Impaired Streams & Cause(s) of Impairment

The Policy for Developing California's Clean Water Act Section 303(d) List allows consideration of biological data for identifying impaired waters. However, a water body cannot be listed as impaired using biological data alone. The impairment also must be associated with a chemical constituent so that a TMDL can be developed to address the constituent. The resulting TMDL focuses on the "associated" constituent whether or not the constituent is the driver of the biological impairment. As a result, there is no incentive or guidance for identifying other potential causes of the biological impairment and addressing the "associated" chemical through a TMDL may or may not improve biological condition.

Options

1. Allow use of biological assessment data alone to list water bodies as impaired.
2. Continue to require biological assessment be associated with impairment due to another constituent before listing the water body as impaired.
3. Include guidance in the plan of implementation for prioritizing resources for addressing impaired streams.

Issues

- Option 1 would require amendment of the Policy for Developing California's Clean Water Act Section 303(d) List.
- How should impairments primarily caused by habitat modification be addressed?

Schedule

Major Milestones	Date
State Board Exec discussion of policy issues	Mar 2012
MCC discussion of policy issues	Mar 2012
Finalize reference condition definition	May 2012
Scoring tool complete	Sep 2012
CEQA scoping meetings	Jun-Jul 2012
Causal assessment guidance complete	Dec 2012
Board meeting information item on technical basis for policy	Jan 2013
Complete draft policy/substitute environmental document (SED)	Feb 2013
Internal policy/SED review and revision	Mar-May 2013
Scientific peer review	Jun-Jul 2013
Prepare response to peer review comments and revise policy/SED	Aug 2013
Release public review draft policy/SED	Sep 2013
Public workshops	Oct 2013
60-day comment period closes	Jan 2014
Prepare response to comments, final policy and Board package. Brief Board members.	Feb-Mar 2014
Board Hearing	Apr 2014

Background

Streams are degraded. For the past 20 years the State Water Board, US EPA, and the Department of Fish and Game have invested significant resources to develop and implement a biological monitoring program in California. Ten years of data show that roughly half of California's perennial stream miles do not support the same diverse biological community as reference¹ streams. Also roughly half of California's stream miles have some form of habitat disturbance. So despite 40 years of water quality regulation, streams still are degraded.

Furthermore, many of the streams in good condition, including some reference streams, are located in areas of California slated for significant urban development in the next 20 to 50 years. Degradation of those streams is inevitable without strong policies in place to prevent it. In fact, some areas of the state already are so degraded and modified that there are no reference streams available to define desirable biological condition.

Mechanisms for protecting streams are limited. A goal of the federal Clean Water Act is to maintain and restore biological integrity of surface waters. The Clean Water Act's anti-degradation framework and the State Water Board's Policy for Protecting High Quality Waters (Resolution 68-16) could be applied to protect reference streams and streams in good biological condition from future degradation. However, the Water Boards lack guidance and consistent tools for using biological assessments for identifying high quality waters and protecting them with uniform, enforceable regulatory requirements under this policy.

Mechanisms for restoring streams are limited. Similarly, the Policy for Developing California's Clean Water Act Section 303(d) List allows consideration of biological data for identifying impaired waters. However, a water body cannot be listed as impaired using biological data alone. The impairment also must be associated with a chemical constituent so that a TMDL can be developed to address the constituent. The resulting TMDL focuses on the "associated" constituent whether or not the constituent is the driver of the biological impairment. As a result, there is no incentive or guidance for identifying other potential causes of the biological impairment and addressing the "associated" chemical through a TMDL may or may not improve biological condition. There is no guidance for setting biological restoration targets for water bodies identified as biologically impaired. Finally, benchmarks for identifying biological impairments and interpreting narrative water quality objectives are not formally adopted in Water Board plans or policies and, therefore, are not enforceable in Water Board regulatory programs.

Biological monitoring data are not assessed consistently statewide. In addition to the State Water Board's statewide biological monitoring program, several Regional Water Boards conduct biological monitoring to assess attainment of aquatic life uses. The State Water Board and five of the Regional Water Boards include requirements in permits for dischargers to conduct biological monitoring. There also are environmental organizations and other state and federal agencies

¹ Reference streams are located in areas of minimal anthropogenic land use disturbance such as agriculture, urban, road density, etc.

that conduct biological monitoring using the State Water Board's standardized protocols. There is no consistent set of scoring tools applicable statewide so data collected in one region may be assessed using different scoring methods than in other regions. This inconsistency frustrates the regulated community and some non-governmental organizations and makes statewide assessments or inter-regional comparisons impossible.

The Regional Water Boards need measurable and enforceable biological endpoints. Biological objectives would give the Regional Water Boards:

- Direct, objective measures of aquatic life beneficial uses;
- Tools to prioritize areas for protection;
- Ability to set expectations for restoration and measure recovery of the biological community (e.g., numeric targets, mitigation monitoring requirements);
- A framework for prioritizing TMDL implementation;
- Numeric targets and permit limits for incorporating into permits for facilities whose discharge and activities impair biological condition;
- Outcome performance measures that are meaningful and can be communicated to the public;
- Incentives and tools for programs and sister agencies to improve physical habitat;
- Ability to integrate water quality with water supply and flow targets; and
- Guidance for applying anti-degradation policies to protect healthy streams.

Progress to Date

Date	Milestone
Mar 2010	Project kick-off meeting. Solicited nominees for Stakeholder Advisory Group.
May-Oct 2010	Stakeholder and Scientific Advisory Groups approve technical work plan.
April 2011	Presented approach for establishing reference condition to Advisory Groups.
Sep-Oct 2011	Presented draft final report establishing reference condition, approach for developing scoring tools, pilot study results, and draft assessment and implementation framework to Advisory Groups.
Jan 2012	Initiated causal assessment pilot studies.